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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/555,555	09/25/2000	Veronique M. Braud	SHP-PT059	9366

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EXAMINER	
VANDERVEGT, FRANCOIS P	
ART UNIT	**PAPER NUMBER**
1644	

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/555,555	BRAUD ET AL.	
	Examiner	Art Unit	
	F. Pierre VanderVegt	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-23 and 30-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *32-34,36 and 37* is/are allowed.

6)☒ Claim(s) *20-23,31,32 and 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This application is a rule 371 continuation of PCT Serial Number PCT/GB98/03686.

Claims 1-19 and 24-29 have been canceled.

New claims 32-37 have been added.

Claims 20-23 and 30-37 are currently pending and are the subject of examination in the present Office Action.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 6, 2004 has been entered.

2. In view of Applicant's amendment and remarks filed May 6, 2004, only the following grounds of rejection are maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 20-23, 30 and 31 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

It was previously stated: "Claim 20 has been amended to recite "cells expressing one of the CD94/NKG2 family of receptors" in lines three and four. Applicant asserts that support for the recitation can be found in the specification at page 3, lines 9-18. However, said passage discloses only that CD94/NKG2A is from the C-lectin superfamily and that CD94 associates with members of the NKG2 family. There is no disclosure, either explicit or implicit, of a distinct family of covalent heterodimeric proteins known as a "CD94/NKG2" family. Accordingly, the recitation constitutes new matter and must be removed. Dependent claims 21-23, 30 and 31 are included in this ground of rejection.

It is suggested that the claim be amended to recite --cells expressing ~~one of the~~ a CD94/NKG2 ~~family of receptors~~ receptor, wherein the NKG2 member is selected from the group consisting of

NKG2A, NKG2B, NKG2C, NKG2D, NKG2E, and NKG2F, at the cell surface--, as the NKG2 family is disclosed in the specification as a closed group consisting of the A, B, C, D, E and F molecules."

Applicant argues that there is descriptive support in the cited passage that would allow the artisan "to recognize from Applicants' disclosure that the CD94/NKG2 family of receptors includes CD94/NKG2A, B, C, D, E, and F." The Examiner agrees to an extent with Applicant's statement. The artisan would indeed recognize that A, B, C, D, E, and F are part of the "CD94/NKG2 family of receptors," but there is no disclosure of the broader genus of receptors that a fair reading of the claim encompasses. The specification recites that the family "consists" of the species A-F and does not disclose or contemplate the existence of any other species. Accordingly, the disclosure of A-F as a sub-genus does not describe the full genus of the "CD94/NKG2 family of receptors" as recited in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 23 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Aldrich et al (1994) Cell 79:649-658, as evidenced by Brooks et al. Journal of Immunology (1999) 162:305-313.

It was previously stated: "Aldrich et al teach a compound consisting of the peptide consisting of the amino acid sequence AMAPRTLLL, which effects the binding of HLA-E to CD94/NKG2 receptors, as evidenced by Brooks et al. Brooks et al teach that the compound AMAPRTLLL associated with HLA-E is recognized by CD94/NKG2A. Therefore, the referenced teachings anticipate the claimed invention."

Applicant's arguments filed May 6, 2004 have been fully considered but they are not persuasive. Applicant argues that because Aldrich is silent regarding CD94/NKG2 receptor cells and Brooks does not suggest that CD94/NKG2 receptor cells would be present in the teachings of Aldrich, "the binding of HLA-E to CD94/NKG2 receptors cannot be an inherent property of Aldrich." Applicant further argues that since Brooks is a post filing date reference, it could not have demonstrated inherency to the artisan in 1994. Applicant appears to be misinterpreting the concept of inherency. Inherency is not a property of the reference, as contended by Applicant, rather it is a property of the peptide. The claim is drawn to a **compound** identified by a method. Irrespective of the method used to identify the peptide, the peptide will always have the same properties. For example, Artisan A happens to isolate a peptide with an antibody reactive with protein X and finds the amino acid sequence of the peptide to be AMAPRTLL.

Artisan B identifies a peptide that affects the binding of HLA-E to CD94/NKG2 receptors and finds the sequence of that peptide to be AMAPRTLL. In other words, Artisan A and Artisan B have identified the same peptide by different means. There is no physicochemical difference between the peptides identified by the two artisans. The peptide of Artisan A would affect binding in the method of Artisan B and the peptide of Artisan B would be bound by the antibody of Artisan A. Applicant's discovery that the peptide AMAPRTLL affects the binding of HLA-E to CD94/NKG2 receptors did not confer any new properties on the peptide. Brooks' teaching that AMAPRTLLL associated with HLA-E is recognized by CD94/NKG2A also did not confer any new properties on the peptide. All the reference demonstrates is a property that the peptide already INHERENTLY possessed. The peptide AMAPRTLL would have been able to affect binding of HLA-E to CD94/NKG2 receptors at, and well before, the time of the teaching of that peptide sequence by Aldrich. As a compound, the peptide with the sequence AMAPRTLL was taught by Aldrich. Applicant's disclosure in the instant specification merely serves to further characterize an otherwise old product. Accordingly, irrespective of its manner of identification, the AMAPRTLLL peptide taught by the Aldrich reference is a compound that would be identified by the method of claim 20 and fully satisfies the metes and bounds of claim 23. New claim 35 is included in this ground of rejection.

5. **The following represents a new ground of rejection.**

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 23 and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claim is broadly drawn to encompass the entire genus of "compounds" that affect the binding of HLA-E to CD94/NKG2. However, the written description of the instant disclosure is limited to small peptides that locate to the binding pocket of HLA-E and affect the binding of HLA-E to CD94/NKG2. The term "compounds" encompasses a far larger genus of modulatory entities including, for example,

small organic molecules, inorganic molecules, HLA-E/peptide chimeras, soluble CD94, anti HLA-E antibodies, anti-CD94 antibodies, anti-peptide antibodies or any other "compound" that affects the binding, whether by direct or indirect means. Applicant is reminded that, while claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed Cir. 1993). The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species. A "representative number of species" means that the species that are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. On the other hand, there may be situations where one species adequately supports a genus. See, e.g., In re Rasmussen, 650 F.2d 1212, 1214, 211 USPQ 323, 326-27 (CCPA 1981) (disclosure of a single method of adheringly applying one layer to another was sufficient to support a generic claim to "adheringly applying" because one skilled in the art reading the specification would understand that it is unimportant how the layers are adhered, so long as they are adhered). In the present case however, the genus is extremely broad, including any compound that affects the binding of HLA-E to CD94/NGK2, while the disclosure is limited to a single species that does not describe any other species of the genus.

7. Claims 23 and 35 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for small peptides that bind into the binding groove of HLA-E and affect the binding of HLA-E to CD94/NKG2, does not reasonably provide enablement for the full scope of compounds that affect the binding of HLA-E to CD94/NKG2. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The claim is broadly drawn to encompass the entire genus of "compounds" that affect the binding of HLA-E to CD94/NKG2. The claim includes in scope, therefore, any compound that would affect the binding of HLA-E to CD94/NKG2 in a manner detectable by the recited assay. The claim includes any compound that can affect the binding by direct or indirect means. The instant disclosure teaches how to make and use a limited number of small peptides that locate to the binding pocket of HLA-E and affect the binding of HLA-E to CD94/NKG2. However, the term "compounds" encompasses a far larger genus of modulatory entities including, for example, small organic molecules, inorganic molecules, HLA-E/peptide chimeras, soluble CD94, anti HLA-E antibodies, anti-CD94 antibodies, anti-peptide antibodies or any other "compound" that affects the binding, whether by direct or indirect means. Based upon the

instant disclosure, the artisan would not be able to make the full scope of compounds that are encompassed by the claims and it would cause an undue amount of experimentation on the part of the artisan to determine the full scope of compounds that satisfy the metes and bounds of the claim.

In view of the breadth of the claims, the quantity of experimentation necessary, the limited working examples, the unpredictability of the art, and the lack of sufficient guidance in the specification, it would take undue trials and errors to practice the claimed invention and this is not sanctioned by the statute.

Conclusion

8. Claims 32-34, 36 and 37 are allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Pierre VanderVegt whose telephone number is (571) 272-0852. The examiner can normally be reached on M-Th 6:30-4:00; Alternate Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

F. Pierre VanderVegt, Ph.D.
Patent Examiner
June 1, 2004

PATRICK J. NOLAN, PH.D.
PRIMARY EXAMINER
6/1/04